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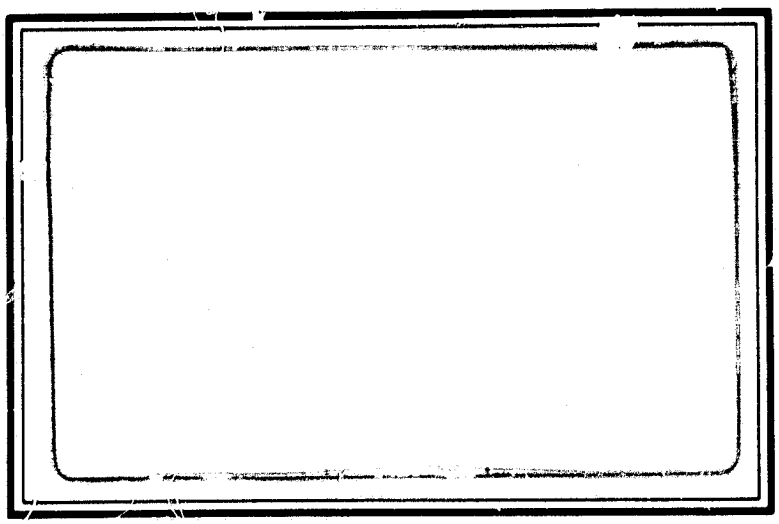

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INTERMETRICS

INTERMETRICS INC.

IR-634-1

SEPAC SOFTWARE

CONFIGURATION CONTROL

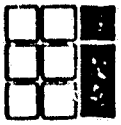
PLAN AND PROCEDURES

REVISION 1

15 MAY 1981

PREPARED FOR: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
HUNTSVILLE, ALABAMA 35812
CONTRACT NUMBER NAS8-33806

PREPARED BY: INTERMETRICS, INC.
3322 SOUTH MEMORIAL PARKWAY
HUNTSVILLE, ALABAMA 35801



INTERMETRICS

PREFACE

This document contains the SEPAC Software Configuration Control Plan and Procedures.

This work was performed for Marshall Space Flight Center's Data Systems Laboratory, Software Engineering Division under NASA Contract NAS8-33806.

Questions concerning this document should be directed to Intermetrics, Inc., Huntsville Office.

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J.R.Bounds, Office Manager

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 SCOPE

This document contains the SEPAC Software Configuration Control Plan and Procedures. The Plans and Procedures are based on the MSFC Software Management and Development Requirements - Book 2: Software Configuration Control (MA-001-006-2H).

The objective of the software configuration control is to establish the process for maintaining configuration control of the SEPAC software beginning with the baselining of SEPAC Flight Software Version 1 and encompasses the integration and verification tests through Spacelab Level IV Integration.

The plans and procedures as specified in the following sections are designed to provide a simplified but complete configuration control process. The intent is to require a minimum amount of paperwork but provide total traceability of SEPAC software.

1.2 APPLICABLE DOCUMENTS

The following documents are referenced by this document:

SEPAC SOFTWARE REQUIREMENTS SPECIFICATIONS, SE-015, Revision 1, May 1978

SEPAC FLIGHT SOFTWARE APPLICATIONS SOFTWARE DESIGN SPECIFICATIONS, SAI-80-573-HU, Revision 2, 5 February 1980

SEPAC SOFTWARE DETAILED DESIGN, ACI Working Document, December 1980

MSFC SOFTWARE MANAGEMENT AND DEVELOPMENT, Preliminary, MA-001-006-2H, 1 February 1979

2.0 SEPAC SOFTWARE CONFIGURATION CONTROL

2.1 SOFTWARE CHANGE CONTROL AUTHORITY

Configuration control of SEPAC software will be the responsibility of the SEPAC team with Intermetrics, Inc. providing configuration management functions in support to the Software Engineering Division, Data Systems Laboratory of the Marshall Space Flight Center.

The method for meeting the objectives of software configuration control is the establishment of the SEPAC Software Control and Review Board (SEPAC/SCRB).

The SEPAC/SCRB is organized and chartered according to the guidelines outlined in Book 2: Software Configuration Control Document of the MSFC Software Management and Development Document (MA-001-006-2H).

The objectives of the SEPAC/SCRB are:

1. To provide MSFC management with visibility of the SEPAC software development and test process.

2. To provide an effective, efficient, and understood method for incorporation of changes into baselined documents.

3. To insure effective software testing.

4. To provide a central point for distributing SEPAC technical information.

The responsibilities and organization of the SEPAC/SCRB are defined in the following sections.

2.2 SEPAC/SCRB RESPONSIBILITIES

The SEPAC/SCRB is responsible for the following functions:

1. Maintain SEPAC Software Baseline Documentation

2. Maintain a SEPAC Technical Library (Appendix A lists SEPAC related documentation)

3. Review and approve SEPAC Software Verification Test Plan

4. Review and approve SEPAC Software Verification Test Procedures

5. Review and disposition SEPAC Software Engineering Change Requests

6. Review and disposition SEPAC Software Trouble Reports

7. Review and disposition SEPAC Software Test Deviations

8. Review and disposition SEPAC Software Engineering Change Proposals

9. Establish agendas and conduct SEPAC Software Readiness Reviews

2.3 SEPAC/SCRB MEMBERSHIP

The organization and membership assignments for the SEPAC/SCRB are:

MEMBERS	RESPONSIBILITY	ORGANIZATION
J.WATKINS(B.Roberts)	CHAIRMAN	MSFC/ES52
R.BOUNDS(W.Womack)	SECRETARY	INTERMETRICS
R.STEVENS(G.Hintze)		MSFC/EF35
B.BAKER		MSFC/EE01
B.GIBSON		SWRI

Membership on the SEPAC/SCRB is determined by each representative organization with the organization providing one member. The members listed above are the primary and alternative members as currently identified. The representative organization may designate any person to represent that organization at the SCRB meetings or to perform the SCRB functions assigned to that organization.

The SEPAC/SCRB meetings are to be open with any NASA, ISAS, or SEPAC contractor personnel welcome to attend.

Intermetrics will provide SEPAC/SCRB secretary functions.

2.4 SEPAC/SCRB MEETINGS

The SEPAC/SCRB meetings are to be scheduled as needed for processing configuration control information and reviewing SEPAC Software status.

The SEPAC/SCRB Chairman will chair the SCRB meetings.

For each meeting the SEPAC/SCRB Secretary will prepare an agenda defining the items that are to be covered for that meeting.

The SEPAC/SCRB Secretary will record minutes of the SEPAC/SCRB Meetings and will distribute those minutes to the members as soon as possible after the meeting. If any action items are assigned by the SCRB, the Secretary will distribute minutes to those persons assigned to perform the action item.

3.0 SEPAC BASELINES

Formal configuration control begins with the baselining of key documents and software programs. The following documents and software programs are baseline items for SEPAC.

BASELINE ITEM	BASELINE DATE
DOCUMENTS	
SEPAC SOFTWARE REQUIREMENTS SPECIFICATIONS, SE-015, Revision 1, 31 May 1978	+ JUNE 1978
SEPAC FLIGHT SOFTWARE APPLICATIONS SOFTWARE DESIGN SPECIFICATIONS, SAI-80-573-HU Revision 2, 5 February 1980	+ MARCH 1980
SEPAC SOFTWARE DETAILED DESIGN, December 1980, ACI Working Document	* SEPTEMBER 1981
SEPAC SOFTWARE VERIFICATION TEST PLAN, IR-633, 15 May 1981	* MAY 1981
SEPAC SOFTWARE VERIFICATION TEST, PROCEDURES, IR-635, 15 May 1981	* MAY 1981
SOFTWARE PROGRAMS	
SEPAC FLIGHT SOFTWARE VERSION 1	* JUNE 1981
SEPAC FLIGHT SOFTWARE VERSION 2	* AUGUST 1981

* These items are to baselined by the SEPAC/SCRB.

+ The current issues of these documents are accepted by the SEPAC/SCRB as baseline documents.

4.0 SEPAC SOFTWARE RESPONSIBILITY

4.1 SEPAC NSSC-II SOFTWARE DEVELOPMENT

Intermetrics is responsible for maintaining internal control of the SEPAC software during the development, unit test, and software build process.

This process includes:

1. Control of the parameter names and unit module names
2. Control of the interfaces between all software modules
3. Control of unit testing
4. Control of the data base design, structure, and parameter assignments
5. Control of the DEP/IU interface
6. Control of the memory and timing budgets
7. Delivery of SEPAC software program package
8. Evaluation of software discrepancy reports
9. Preparation of software change requests
10. Aid in preparation of software change evaluations

4.2 SEPAC ECAS SOFTWARE DEVELOPMENT

The Space Sciences Laboratory and Data Systems Laboratory of MSFC are responsible for managing the interface definitions for SEPAC Software. This includes:

1. Control of the DEP/ECOS interface
2. Control of the DEP/ECAS interface

4.3 SEPAC SOFTWARE VERIFICATION

Intermetrics is to provide SEPAC Verification Software testing functions. This responsibility includes:

1. Develop verification test procedures
2. Maintain verification test procedures
3. Perform verification tests
4. Archive verification tests results
5. Make available verification test results
6. Analyze verification tests
7. Report software discrepancies
8. Aid in preparation of software change evaluations
9. Evaluate software change proposals
10. Disposition of discrepancies

5.0 CONFIGURATION CONTROL PROCESS

5.1 CONFIGURATION CONTROL PROCESS

The configuration control process to be used by SEPAC is depicted in Figure 5-1.

There are two methods for initiating configuration control actions relative to SEPAC Software.

1. New or expanded scope, potential software changes identified after baselining of documentation or computer programs.

2. Deviations or software problems identified during formal reviews or verification tests.

The configuration process as shown in Figure 5-1 is self explanatory. For a detailed description of the process see "Book 2: Software Configuration Control" of the MSFC Software Management and Development Requirements series.

The forms that are used in the configuration process are described in the following section.

CONFIGURATION CONTROL PROCESS

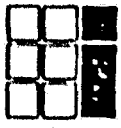
STEP	FORM	CONFIGURATION CONTROL ACTION
0	SRN	PREPARE SOFTWARE RELEASE NOTICE FOR BASELINE DOCUMENTS OR COMPUTER PROGRAM
1		IF SOURCE OF ACTION IS TEST DISCREPANCY: GO TO STEP 2 REVIEW DISCREPANCY: GO TO STEP 2 NEW, MODIFIED SCOPE: GO TO STEP 8 SOFTWARE PROBLEM: GO TO STEP 26
2	(T)DR	PREPARE (TEST) DISCREPANCY REPORT
3		SUBMIT (T)DR TO SCRB
4		LOG (T)DR
5	SCE	PREPARE SOFTWARE CHANGE EVALUATION
6		LOG SCE
7		IF NEW OR MODIFIED CHANGE GO TO STEP 17
8	ECR	PREPARE ENGINEERING CHANGE REQUEST
9		SUBMIT ECR TO SCRB
10		LOG ECR
11	SCE	PREPARE SOFTWARE CHANGE EVALUATION
12		LOG SCE
13		IF CHANGE APPROVED GO TO STEP 17
14	CCBD	PREPARE CONFIGURATION CONTROL BOARD DIRECTIVE - "CHANGE DISAPPROVED"
15		LOG CCBD

FIGURE 5-1: CONFIGURATION CONTROL PROCESS

CONFIGURATION CONTROL PROCESS
(Continued)

STEP	FORM	CONFIGURATION CONTROL ACTION
16		ACTION CLOSED
17	ECP	PREPARE ENGINEERING CHANGE PROPOSAL
18		SUBMIT ECP TO SCRB
19		LOG ECP
20		IF CHANGE APPROVED: GO TO STEP 21 REJECTED: GO TO STEP 14 TO BE RESUBMITTED: GO TO STEP 8
21	CCBD	PREPARE CONFIGURATION CONTROL BOARD DIRECTIVE - "CHANGE APPROVED"
22		LOG CCBD
23		IMPLEMENT SOFTWARE CHANGE
24		REVISE DOCUMENTATION
25		ACTION CLOSED
26	SPR	PREPARE SOFTWARE PROBLEM REPORT
27		SUBMIT SPR TO SCRB
28		LOG SPR
29		GO TO STEP 5

FIGURE 5-1: SEPAC CONFIGURATION CONTROL PROCESS
(Continued)



5.2 FORMS

Figures B-1 through B-13 identify the forms that are used by the configuration process. A brief description of each form follows.

1. ENGINEERING CHANGE REQUEST (ECR) - The ECR is to be used to initiate requests for software changes to satisfy new or additional requirements. (See Figure B-1).

2. CONFIGURATION CONTROL BOARD DIRECTIVE (CCBD) - The CCBD is to be used to close out a request presented to the SEPAC/SCRB whether the closeout is approval or disapproval. (See Figure B-2).

3. SOFTWARE CHANGE EVALUATION (SCE) - The SCE is to be used to describe the evaluation of the change impact. This evaluation is presented to the SEPAC/SCRB to aid in the approval process for any request initiated by an ECR. (See Figure B-3).

4. (TEST) DISCREPANCY RECORD (DR/TDR) - The (T)DR is to be used to record any discrepancies. (See Figure B-4).

The DR is to be used to record any design implementation errors or deficiencies subsequent to document approval or is used to record any design implementation errors or deficiencies recognized during formal reviews.

A TDR is to be used any time a problem/anomaly is encountered during testing with the exception of an obvious test deviation or human factor which is immediately recognized and corrected without disturbing the normal progress of the test.

5. SOFTWARE PROBLEM REPORT (SPR) - The SPR is to be used to report software problems. (See Figure B-5).

6. SOFTWARE RELEASE NOTICE (SRN) - The SRN is to be used to document a software release. Under "comments" the ECR's, and (T)DR's closed out by the release are listed. (See Figure B-6).

7. ENGINEERING CHANGE PROPOSAL (ECP) - The ECP is to be used to describe software change proposals as identified in the ECP. (See Figure B-7).

8. (TEST) DISCREPANCY RECORD LOG (T/DRL) - The T/DRL is to be used to log all (T)DR's initiated. (See Figure B-8).

9. ENGINEERING CHANGE REQUEST LOG (ECRL) - The ECRL is to be used to log all ECR's initiated. (See Figure B-9).

10. ENGINEERING CHANGE PROPOSAL LOG (ECPL) - The ECPL is to be used to log all ECP's initiated. (See Figure B-10).

11. SOFTWARE PROBLEM REPORT LOG (SPRL) - The SPRL is to be used to log all SPR's initiated. (See Figure B-11).

12. SEPAC SCRB CONFIGURATION CONTROL BOARD DIRECTIVE LOG (CCBDL) - The CCBDL is to be used to log all CCBD's initiated. (See Figure B-12).

13. SEPAC CONFIGURATION CONTROL CROSS REFERENCE - The SEPAC Configuration Control Cross Reference is to be used to Cross Reference all ECR's, ECP's, (T)DR's, SCE's, CCBD's, and SPR's. (See Figure B-13).

5.3 CONFIGURATION STATUS ACCOUNTING

The configuration control accounting function provides the capability of capturing, storing, and retrieving all data pertinent to the management and operation of the SEPAC software.

The status accounting function provides the following information:

1. Current and accurate SEPAC configuration baseline documents
   - Original released document
   - Redlined document for approved changes

2. Current and accurate SEPAC configuration baseline computer programs
   - Source listings
   - Object programs
   - Load programs

3. (Test) Discrepancy Record Log

4. Engineering Change Request Log

5. Engineering Change Proposal Log

6. Software Problem Report Log

7. Configuration Control Board Directive Log

8. Configuration Control Cross Reference

9. SEPAC Technical Library

This information will be kept by Intermetrics and will be available on request or will be provided at the SEPAC/SCRB meetings.

6.0 INTERFACE MANAGEMENT

The SEPAC/SCRB will coordinate any activities that are required of the SEPAC team for interfacing with other NASA or ISAS organizations.

These activities include:

* SEPAC Experiment Computer Application Software (ECAS)
* SEPAC Experiment Computer Operating System (ECOS) DEP services.
* LEVEL I/II/III Integration
* LEVEL IV Integration
* POCC
* Payload Crew Training
* AEPI Interface

7.0 UTILIZATION OF CONFIGURATION CONTROL

7.1 PRIOR TO SEPAC SOFTWARE BASELINE

Prior to baselining of SEPAC software, Software Problem Reports (SPR) are to be generated to document SEPAC software or system problems noted during unit or integration testing. The Software Problem Reports are to be written for those problems that affect SEPAC Software Requirements, such as:

* Inconsistent Software Requirements

* Vague or unclear Software Requirements

* Software Requirements that cannot be implemented

Software Problem Reports or Discrepancy Reports are not to be used during this phase to note software design and implementation problems.

The SEPAC Log Book (Green Book) is to be used during this phase to document software design and implementation problems and their resolutions.

7.2 BASELINING SEPAC SOFTWARE

Delivery of SEPAC software includes delivery of the SEPAC software listing and load tape. A Software Release Notice is to be prepared to document formal delivery of the software package.

7.3 AFTER SEPAC SOFTWARE BASELINE

After SEPAC software has been baselined, formal configuration control applies to all software test processes. Software Problem Reports and/or Discrepancy Notices are to be prepared for all noted errors.

For the baseline software package, a Patch Log is to be maintained. The Patch Log contains all software patches made to the software program. All approved patches (temporary or permanent) must be entered in the Patch Log. The Patch Log identifies the machine language and assembly language patches, reason for the patch, cross reference to Software Change Notice, date, and implementor.

APPENDIX A

SEPAC LIBRARY

SEPAC LIBRARY

SEPAC FLIGHT APPLICATIONS SOFTWARE DESIGN SPECIFICATION
SAI-80-573-HU
Revision 2: February 5, 1980
Science Applications, Inc.
NAS8-32816

SEPAC VERIFICATION TEST PROCEDURE
SE-1051E
ISAS
Draft: 1 December 1978
Preliminary 1: 30 June 1979
Preliminary 2: 12 March 1980

EOIVS EXPERIMENT PARAMETER/MESSAGE REDUCTION SOFTWARE INTERFACE CONTROL DOCUMENT
Atsuko Computing International
Preliminary: October 1980

SEPAC SOFTWARE REQUIREMENT SPECIFICATIONS (SSRS)
SE-015
SEPAC/ISAS
Revision 1: 31 May 1978

SEPAC SOFTWARE DETAILED DESIGN (SDD)
Atsuko Computing International
Working Document: December 1980

SEPAC INTERFACE UNIT REQUIREMENTS AND CAPABILITIES DOCUMENT
Southwest Research Institute
February, 1979

SEPAC SOFTWARE VERIFICATION TEST PLAN
IR-633-1
Intermetrics, Inc.
May 15, 1981

SEPAC SOFTWARE VERIFICATION TEST PROCEDURES
IR-635
Intermetrics, Inc.
May 15, 1981

SEPAC LIBRARY

SPACELAB MISSION 1 FLIGHT SOFTWARE REQUIREMENTS SPECIFICATION
MDC G8315B
McDonnell Douglas Corporation
August 1980

SPACELAB MISSION 1 FLIGHT SOFTWARE DESIGN SPECIFICATIONS
ECO 8951A
McDonnell Douglas Corporation/IBM
September 1980

SPACELAB MISSION 1 FLIGHT SOFTWARE DESIGN SPECIFICATION
ECO 8951
McDonnell Douglas Corporation/IBM
Preliminary: June 1980

SPACELAB MISSION 1 EXPERIMENT OPERATING PROCEDURES
INS002 SEPAC
NASA/MSFC Systems Analysis and Integration Laboratory
JA-090
Revision A: July 1980

SPACELAB MISSION 1 ECOS TIMELINE REQUIREMENTS DOCUMENT
NASA/MSFC Systems Analysis and Integration Laboratory
Preliminary: August 1980

SPACELAB MISSION 1 MISSION OPERATIONS REQUIREMENTS DOCUMENT FOR EXPERIMENT INS002 SPACELAB EXPERIMENT WITH PARTICLE ACCELERATORS
NASA
Review Copy: March 1980

SPACELAB 1 INTEGRATION PROJECT EXPERIMENT COMPUTER OPERATING SYSTEM
DESIGN SPECIFICATION
McDonnell Douglas Corporation
ECO 8945B
April 1980

SPACELAB INTEGRATION PROJECT EXPERIMENT COMPUTER OPERATING SYSTEM DESIGN SPECIFICATION - VOLUME II
McDonnell Douglas Corporation
ECO 8945B
April 1980

SEPAC LIBRARY

SPACELAB MISSION 1
PAYLOAD CREW TRAINING COMPLEX
EXPERIMENT SIMULATOR MODELING
REQUIREMENTS FOR 1NS002
MSFC/SAIL/ODD/OPAB
Initial Release: December 1980

APPENDIX B

CONFIGURATION CONTROL FORMS

1. NUMBER:	2. PCN:	MSFC ENGINEERING CHANGE REQUEST (See Instructions on reverse)	3. DATE:	4. PAGE 1 OF
5. TO:		6. THRU:	7. FROM:	

8. TITLE OF CHANGE:

9. RECOMMENDED PRIORITY: ☐ Emergency ☐ Urgent ☐ Routine	10. NEED DATE:
11. PROGRAM(S)/PROJECT(S) AFFECTED:	12. END ITEM(S) AFFECTED BY NOMENCLATURE:
13. RECOMMENDED EFFECTIVITY:	14. BASELINE DOCUMENTATION AFFECTED (Specs, ICD, etc.):

15. RELATED CHANGES (ECR, ECP, CR, etc.) BY NUMBER:

16. JUSTIFICATION FOR CHANGE (Include effect if not incorporated) (If necessary, continue on MSFC - Form 3237-1, continuation sheet):

17. EFFECTS ON:

☐ Hardware ☐ Facility ☐ Schedule (See Enclosure _____ for impact) ☐ Other (Specify):
☐ Software ☐ Requirements Documentation ☐ Cost (Estimated cost included in Enclosure _____)

18. DESCRIPTION OF CHANGE (Include sketches in enclosure) (If necessary, continue on MSFC - Form 3237-1, continuation sheet):

19. SIGNATURE OF ORIGINATOR:	DATE:	TELEPHONE NUMBER:	OFFICE SYMBOL:

20. CONCURRENCE

SIGNATURE & ORGANIZATION	DATE	SIGNATURE & ORGANIZATION	DATE

21. TECHNICAL APPROVAL

SIGNATURE & ORGANIZATION	DATE	SIGNATURE & ORGANIZATION	DATE

MSFC - Form 3111 (Rev. March 1974)

FIGURE B-1: ENGINEERING CHANGE REQUEST

MARSHALL SPACE FLIGHT CENTER
CONFIGURATION CONTROL BOARD DIRECTIVE

1. (MI) NO.:	2. CONFIGURATION CONTROL BOARD:	3. DATE:
4. CHANGE NO.:		5. PAGE OF
6. PROGRAM CONTROL NO.:	7. RESPONSIBLE INDIVIDUAL(S)/ORGANIZATION(S):	
8. CHANGE TITLE:	9. END ITEM NUMBER AND NOMENCLATURE:	
10. EFFECTIVITY:	11. BASELINE DOCUMENTATION AFFECTED (Specs., ICDs., Etc.):	

12. CHANGE DISPOSITION:

13. CCB MEMBERS	CONCUR YES	CONCUR NO	CCB MEMBERS	CONCUR YES	CONCUR NO	14. CCB CHAIRMAN

MSFC - Form 3213 (Rev. September 1978)

FIGURE B-2. CONFIGURATION CONTROL BOARD DIRECTIVE

PCIN NO.	SOFTWARE CHANGE EVALUATION	PAGE __ OF ___
		OFFICE
CE REV. NO.	TITLE	

CHANGE IMPACT:

- ☐ SAFETY
- ☐ PERFORMANCE
- ☐ RELIABILITY
- ☐ ESE
- ☐ FLIGHT OPERATIONS
- ☐ GROUND OPERATIONS
- ☐ SIMULATORS & TRAINERS
- ☐ SOFTWARE
- ☐ PAYLOADS
- ☐ TURNAROUND
- ☐ OTHER (SPECIFY)

	SCHEDULE IMPACT:	COST PER FLIGHT IMPACT:

COST IMPACT:	FY	FY	FY	FY	REMAINDER	TOTAL

IMPACT DESCRIPTIONS:

IMPACT OF NON INCORPORATION:

RECOMMENDATION:

CHANGES EVALUATED	APPROVED BY:
	SIGNATURE DATE
	SCRB MEMBER

SA61 Form-10
(May 1976)(OT)

FIGURE B-3: SOFTWARE CHANGE EVALUATION

WRITE HARD FOR LEGIBLE COPIES

DISCREPANCY RECORD	TOTAL SHEETS	2	3	4	1A	1B	5	6	7	8	9	10			1 TDN NO.	2 PAGE OF

3 PART NAME:	4 PART NO & REV.	5. S/N/LOT NO.	6 EPL/HEV	7 D R NO.

8 REF DESIG.	9. MEAS NO.:	10 MFG OR SUPPLIER	11 EFFECTIVITY	12 I R NO

13 NHA NAME:	14 NHA P/N:	15 DETECTED DURING:	16 REF DOC NO:

17 SUBSYSTEM/PROGRAM	18.	19.	20 HOW CAT.: ☐ Flight ☐ GSE ☐ Other

21. ITEM NO.	22. STEP _____ DISCREPANCY TIME _____

23. INITIATOR:	24. ORGN.:	25. TEST CONDUCTOR/SUPERVISOR:	26 Q C STAMP:	27. DATE:

28. ITEM NO.	29 DISPOSITION CONSTRAINT ☐ Yes ☐ No SAFETY HAZARD ☐ Yes ☐ No T/S PLAN REQ. ☐ Yes ☐ No TO _____ T CHOR	30 WORKED BY	31. ITEM ACCEPTANCE

32. MATERIAL REVIEW REQUIRED ☐ Yes			33 FINAL DISPOSITION:					34 FINAL ACCEPTANCE & DATE	35.	36 ACCEPT.:
ITEM NO.	FUNCTIONAL FAIL.:	FA REQ.:	(1) Rel	(2) UAI	(3) GTO	(4) Rwk	(5) Wvr			
	☐	☐ Yes ☐ No	(6) RTV	(7) Scp	(8) C/SC	(9) Other				

NHPC Form 666 (November 1974)

1. RECORD COPY

FIGURE B-4: DISCREPANCY RECORD

INTERMETRICS INCORPORATED • 733 CONCORD AVENUE • CAMBRIDGE, MASSACHUSETTS 02138 • (617) 661-1840
TELEX NO. 710 320 7523

WRITE HARD FOR LEGIBLE COPIES

DISCREPANCY RECORD (Continuation Sheet)	1	2. TDN NO.:	3 PAGE OF
	4	5	6 D.R. NO.:

7 ITEM NO.		8 WORKED BY	9 ITEM ACCEPT.

USE ADDITIONAL COPIES OF THIS FORM FOR FURTHER DISCREPANCIES, DISPOSITIONS, OR RECURRENCE CONTROL REQUEST EXPLANATIONS.	FINAL ACCEPTANCE	10. DATE:	11.	12. ACCEPT.:

NSFC - Form [illegible] (November 1976)

1. RECORD COPY

FIGURE B-4: DISCREPANCY RECORD (CONTINUED)

SOFTWARE PROBLEM REPORT			SPR NO.
PROGRAM NAME	DATE	TIME	SUBSYSTEM
COMPONENT IDENTIFIER	REV.	TCID	DISK OR TAPE ID
ORIGINATOR	ORGANIZATION		LOCATION
INFORMATION SUPPLIED	☐ DUMP ☐ LINE PRINTER OUTPUT ☐ POST PROCESSING DATA	☐ COMPILER LISTING ☐ TRANSLATOR OUTPUT ☐ OTHER SPECIFY	
DESCRIPTION OF PROBLEM			
REVIEWER'S SIGNATURE	DATE		
RESULTS OF INVESTIGATION		SCHEDULED DELIVERY	
INVESTIGATOR	DATE		
APPROVAL SIGNATURE	DATE		

FIGURE B-5: SOFTWARE PROBLEM REPORT

SOFTWARE RELEASE NOTICE

SRN # _____

CONFIGURATION	COMPONENT	SUBSYSTEM	ORBITER/TEST CONFIG	DATE
PATCH STATUS _____ PATCHES ONLY _____ ASSEMBLY/COMPILE W/PATCHES _____ ASSEMBLY/COMPILE ONLY			ID DISK _____ TAPE _____ FLOPPY _____	
PROGRAMMER		DATE	DEPT. MGR.	DATE
VALIDATION		DATE	VALIDATION MGR.	DATE

COMMENTS:

FIGURE B-6: SOFTWARE RELEASE NOTICE

ENGINEERING CHANGE PROPOSAL

THE FORMAT OF THE ENGINEERING CHANGE PROPOSAL IS LEFT TO THE ORGANIZATION PREPARING THE ECP. THE ECP SHOULD REFERENCE THE PROGRAM, END ITEMS, CONTRACT NUMBER AND RELATED ECR.

FIGURE B-7: ENGINEERING CHANGE PROPOSAL

(TEST) DISCREPANCY REPORT LOG

T(DR)	PROBLEM DESCRIPTION	ENTRY DATE	STATUS	CLOSE DATE

ENGINEERING CHANGE REQUEST LOG

ECR	TITLE	ENTRY DATE	STATUS	CLOSE DATE

ENGINEERING CHANGE PROPOSAL LOG

ECP	TITLE	ENTRY DATE	STATUS	CLOSE DATE

SOFTWARE PROBLEM REPORT LOG

SPR	TITLE	ENTRY DATE	STATUS	CLOSE DATE

CONFIGURATION CONTROL BOARD DIRECTIVE LOG

CCBD	TITLE	ENTRY DATE	STATUS	CLOSE DATE

SEPAC CONFIGURATION CONTROL CROSS REFERENCE

	ECR	ECP	SCE	SPR	(T)DR	CCBD
ECR						
ECP						
SCE						
SPR						
(T)DR						
CCBD						

FIGURE B-13: SEPAC CONFIGURATION CONTROL CROSS REFERENCE